



**OFFICE OF THE SECRETARY OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION**

HONORABLE PHILIP E. COYLE
DEFENSE OT&E COUNCIL MEETING

November 2, 2000



Outline

- The New 5000 Model and Evolutionary Acquisition
- T&E Resource Trends
- Congressional Interest
- Planning, Programming and Budgeting
- DSB Report Update
- GAO Report: Defense Acquisition Best Practices
- Conclusions

The New 5000 Model T&E What's Different & What's Not

- 1. Formalizes the Integrated T&E Process**
- 2. Emphasizes T&E Involvement in S&T Activities**
- 3. Creates a Service/OSD Integrated Test Team**
- 4. Facilitates T&E Involvement During Deployment**
- 5. Identifies interoperability requirements as Key Performance Parameters (KPP)**
- 6. Maintains the Mandatory TEMP Format**

The New 5000 Model

Statutory T&E Unchanged

<u>INFORMATION REQUIRED</u>	 MILESTONE 			<u>FULL RATE PRODUCTION DECISION</u>
	<u>A</u>	<u>B</u>	<u>C</u>	
Live Fire Waiver		X		
LRIP Quantities		X		
OT Plan	Prior to start of OT&E			
Beyond LRIP Report				X
LFT&E Report				X
Post-Deployment Performance Review				X

NOTE: Sixteen Other Non-T&E Related Areas

The New 5000 Model

Regulatory T&E Unchanged

INFORMATION REQUIRED	MILESTONE			FULL RATE PRODUCTION DECISION
	<u>A</u>	<u>B</u>	<u>C</u>	
Validated MNS	X			
Validated ORD		X	X	
Acquisition Strategy	X ^{1/}	X	X	X
Exit Criteria	X	X	X	X ^{2/}
TEMP	X ^{3/}	X	X ^{4/}	X
Independent Technology Assessment		X	X	
Interoperability Certification				X
OT&E Results		X	X	X
Component LFT&E Report		Completion of LFT&E		

**NOTE: Nine Other Non-T&E
Related Areas**

^{1/} Component Advanced
Development (if Program Initiation).
^{2/} At each other review as well.

^{3/} Approved by OSD 180 days after MS A.
^{4/} Update, if necessary.

The New 5000 Model T&E Implications

- **Tendency for more, smarter, and earlier T&E activities**
- **Formulation of sound & efficient T&E programs that:**
 - **Combine T&E events**
 - **Share data**
 - **Emphasize operational realism in DT&E**
- **Require T&E personnel to be:**
 - **Involved early**
 - **Flexible**
 - **Adaptable**
- **Consideration of a formal lessons learned program**

Evolutionary Acquisition Key Factors

■ Requirements

- Urgency of need and evolving threat

■ Technology

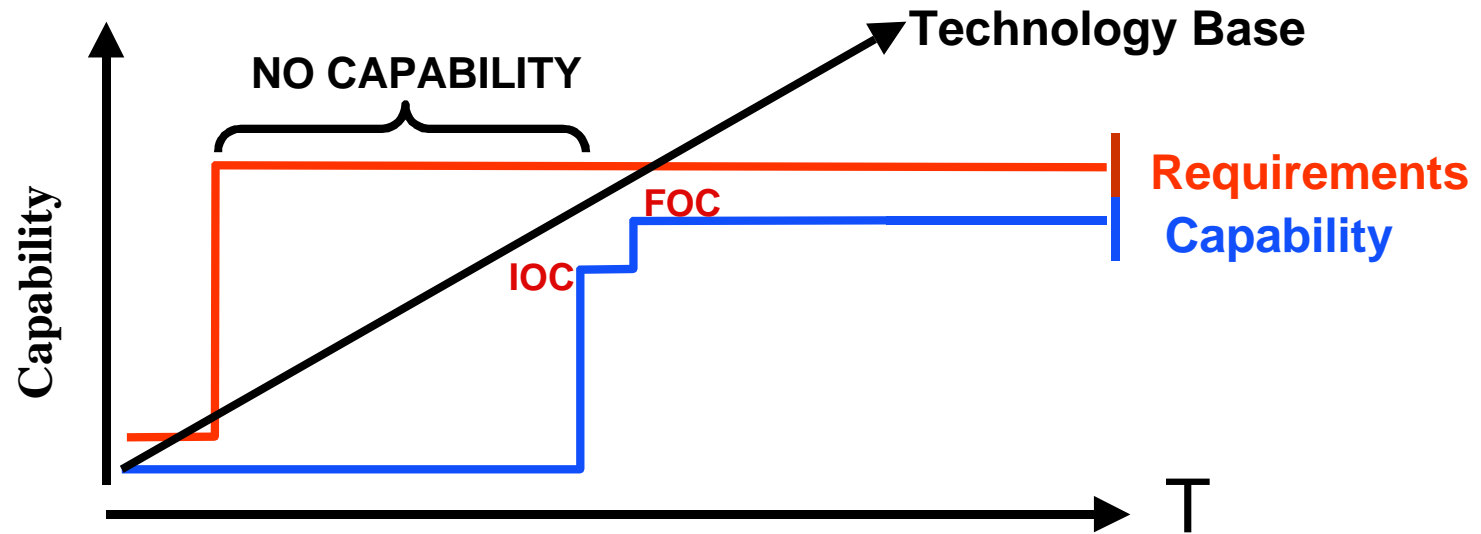
- Readiness and availability of key technologies

■ Affordability

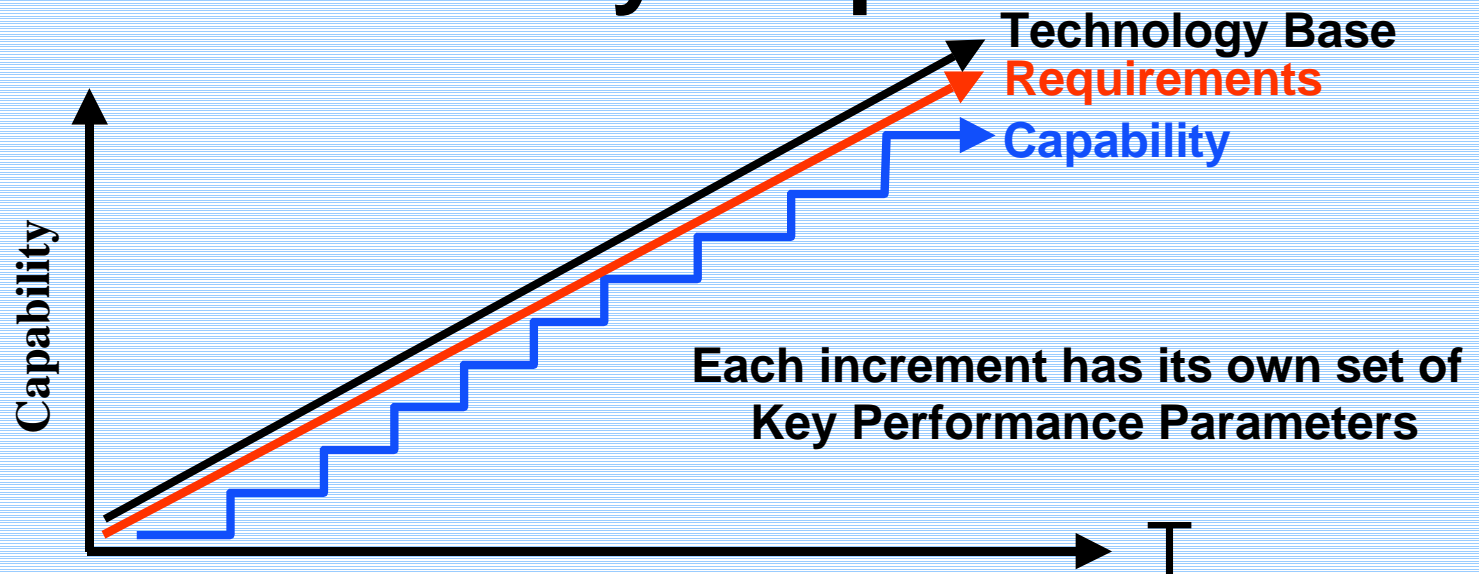
- Affordability of objective capability

- All three factors need to be considered when structuring an evolutionary strategy
- Evolutionary acquisition is the preferred strategy by USD(AT&L)
- Modular open systems design is a key enabler
- Close communication between acquisition, requirements, test, and budget communities is essential
- **Early involvement by OTAs in INTEGRATED test program is vital**

Traditional Acquisition



Evolutionary Acquisition



Evolutionary Acquisition T&E Considerations

- **Time-phased requirements will drive time-phased testing**
 - **Early OTA Involvement**
- **Interoperability/Systems-of-Systems testing policy exists**
- **Resources must be planned, programmed and budgeted for testing support at all phases**

Support of Evolutionary Acquisition

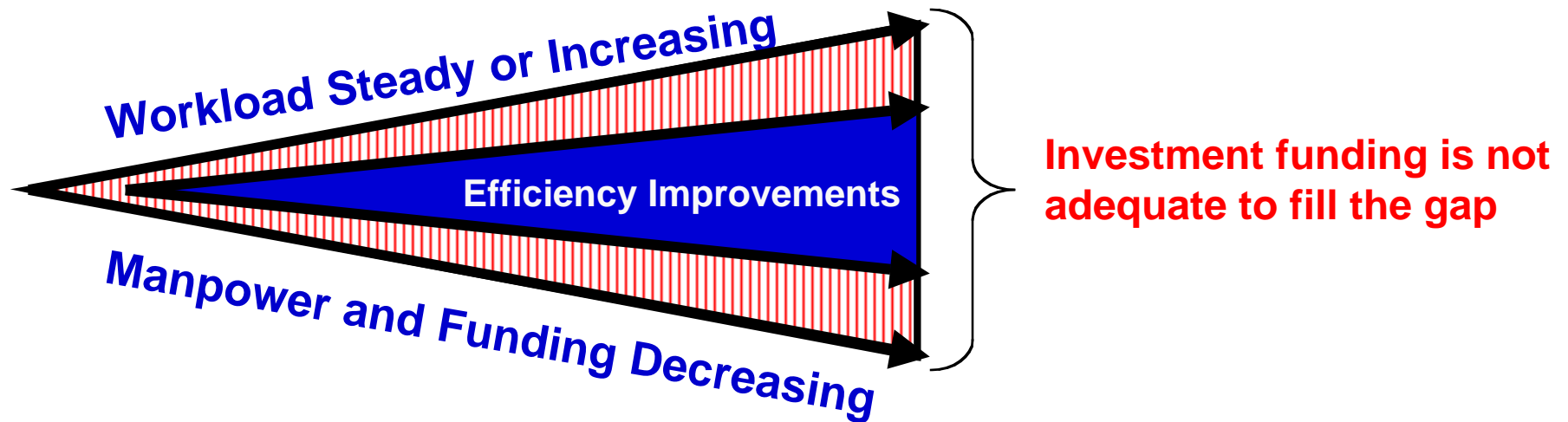
- **Test military capability vs. testing of discrete parameters**
 - Testing military capability = OT&E
- **Identify CAIV tradeoffs or requirement slips early**
 - Early OTA involvement
- **Test performance deltas based on risk**
 - Need OTA insight
- **Integrate operational S/W into simulators**
 - OT&E realism
- **Expand use of experiments and exercises to support OT**
 - Also a DSB theme
- **Get early agreement on testing across systems**
 - Early OTA involvement

Implementation Challenges

- **Understanding and supporting new acquisition strategies**
- **Crafting an effective and supportable evaluation strategy at Milestone A**
- **Defining a “militarily useful capability” early and evaluating accordingly**
- **Ensuring that T&E of successive evolutionary blocks are adequately planned and funded**
- **Integrating the entire test and evaluation community into the new evolutionary acquisition approach**



State of the T&E Infrastructure



- T&E workload is generally steady or increasing
- Resources for test and evaluation down significantly
- T&E Centers are focused on increasing efficiency
- Investment is not keeping pace with technology
- Acquisition programs are being impacted

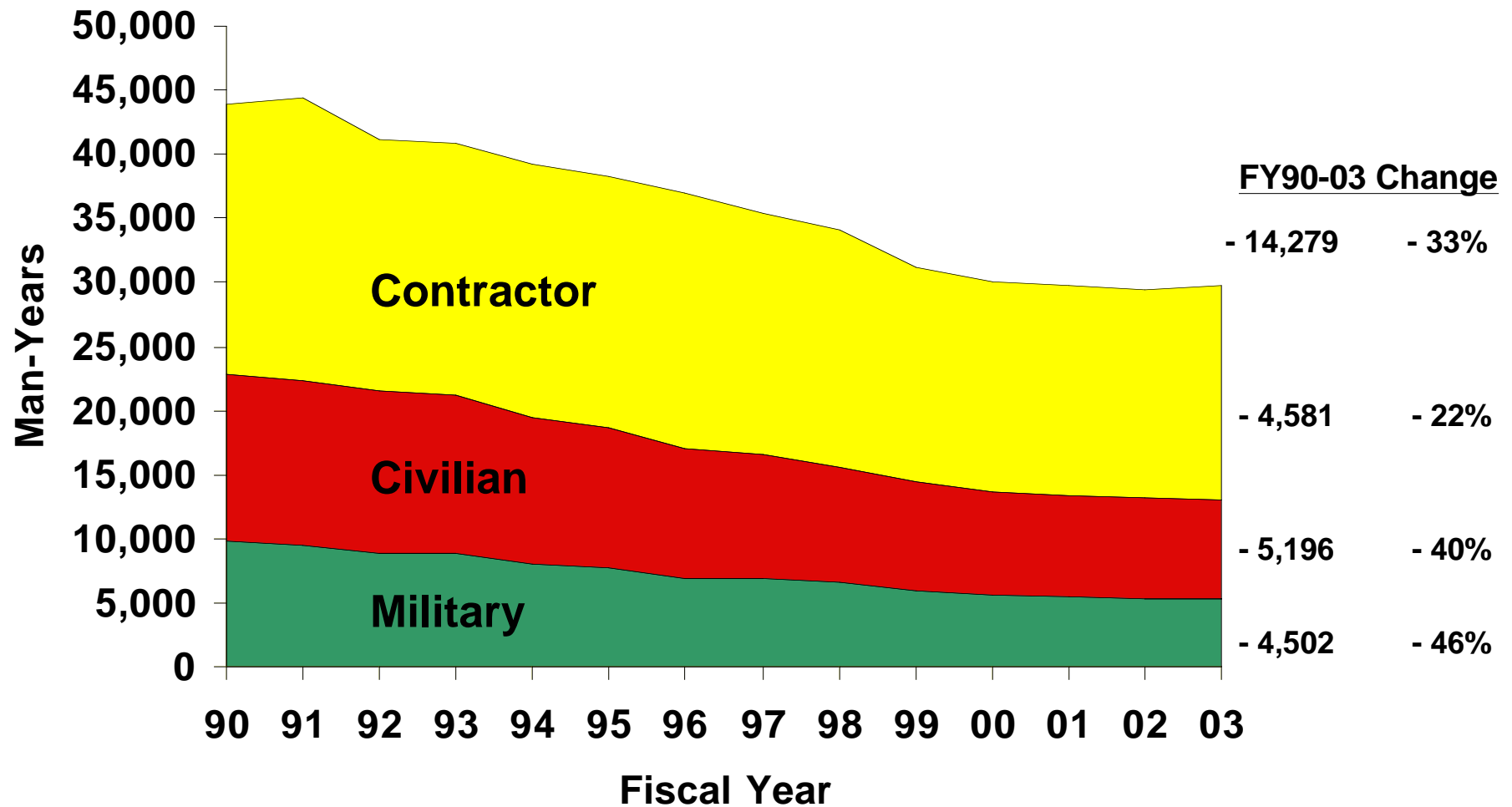


OTA Demographic Study Results Overview (FY90-99)

- **Size:** OTA workforce downsized 31%
 - 40% military reduction, 8% civilian reduction
 - Contractor workforce increased 15%
 - Net workforce decrease of 22%
- **Aging:** Minimal infusion of junior civilian professionals
 - More than 50% of civilian professional workforce over 50; (34% of GS-7/GS-15 personnel retirement eligible by 2004)
 - Only 12% under age 40
- **Occupational Mix:**
 - Military: Substantial decrease in Tactical Operations Officers
 - Civilian: Increases in Scientists & Professionals and Administrators categories
- **Composition:** **Fewer military** - more contractors



Reductions in All Elements of MRTFB Workforce

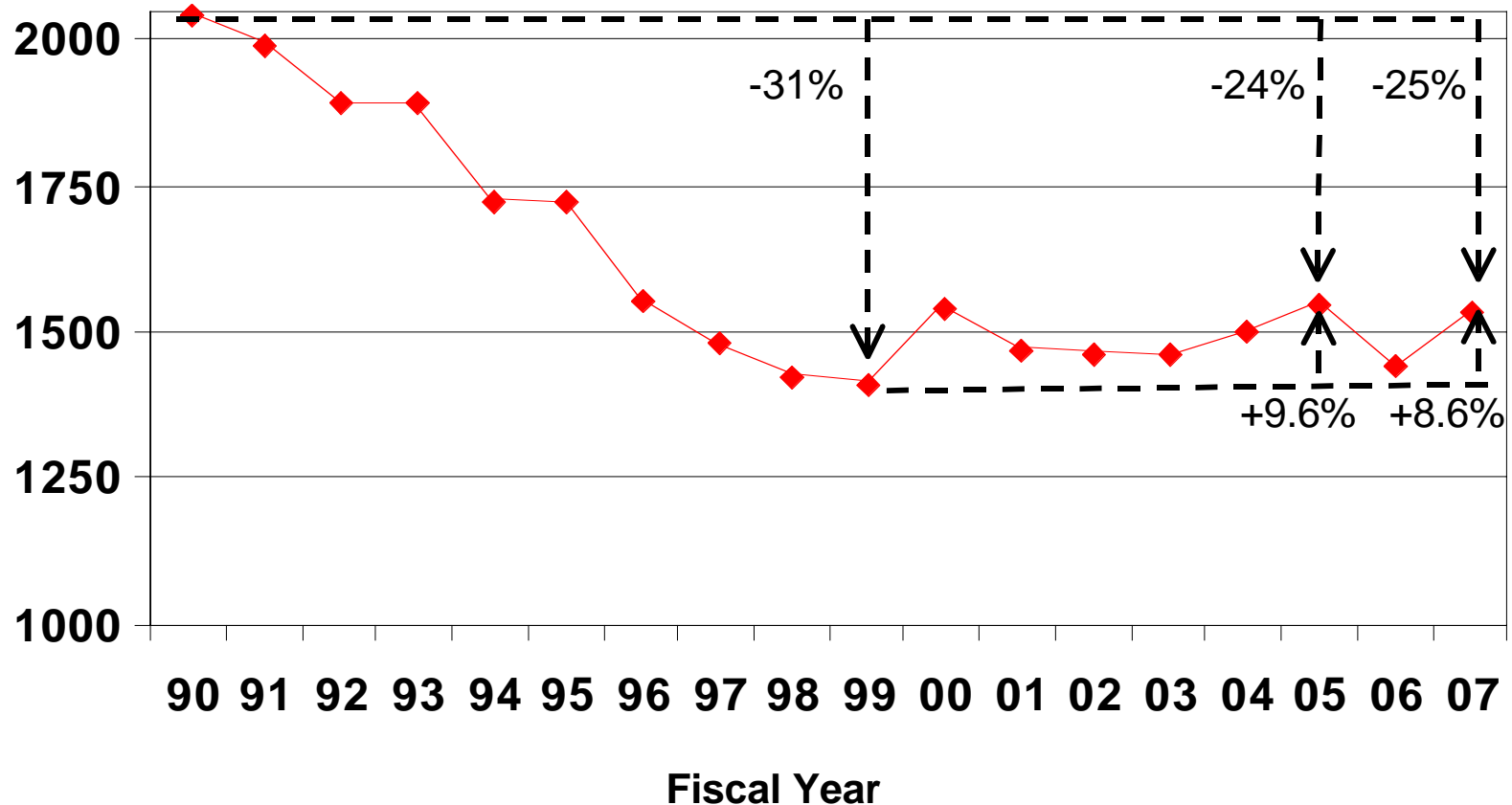




RDT&E Funding for T&E

(Institutional Operations and Investments)

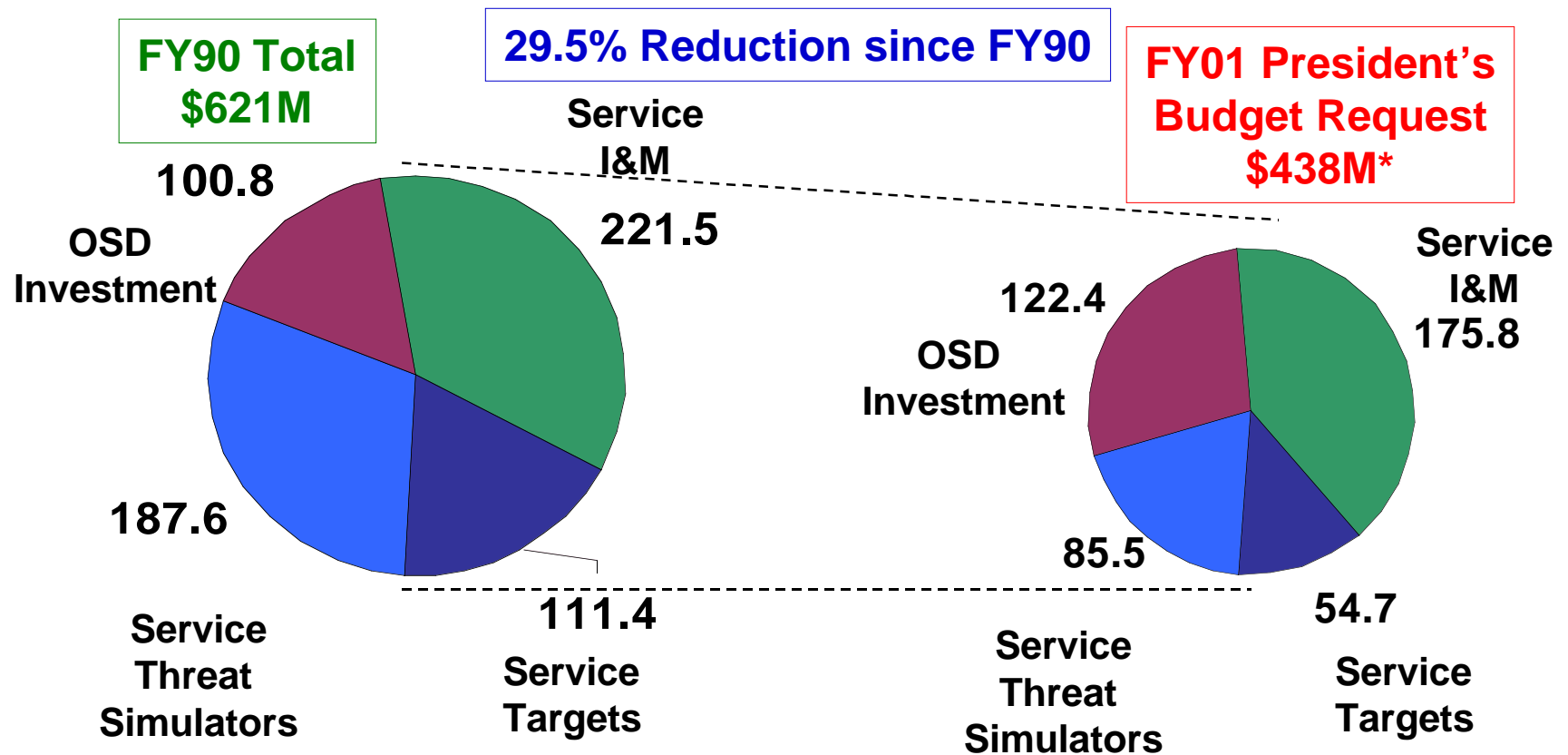
Funding
(FY2001 \$M)



FY01 does not reflect Congressional Adds



RDT&E T&E Investment Funding Reduced



*** The FY01 Defense Appropriation Act added \$53 million to the request.**

*RDT&E Funding (FY01 \$)

Includes T&E Investment, Targets and Threat Simulators; excludes Military Construction and Procurement



Congressional Language

FY01 House Appropriation

Committee Report

BUDGETING FOR OPERATIONAL TEST

“The Committee is concerned that the Military Departments are not adequately budgeting for operational testing. The Committee understands that severely constrained operational test budgets are forcing the Services’ operational test communities to focus reporting only on the highest profile programs with small and medium sized programs proceeding into production without formal reporting from the operational test community. The Committee believes that this situation must be corrected and fully expects the Military Departments to budget adequately to ensure all programs benefit from an appropriate level of independent operational testing.”



Congressional Language

FY01 House Appropriation Committee Report

CLOSE COMBAT TACTICAL TRAINER (CCTT)

The HAC zeroed the procurement funding for CCTT in FY01 because of the lack of funding to conduct required FOT&E. The SAC reduced the budget request by approximately \$61M. The conference settled on cutting the procurement funding by one half (\$42M) because of their concern over funding for FOT&E.

(After this issue was raised on the Hill, the Army agreed to fund the FOT&E, which is being conducted this month. But the failure to properly resource the FOT&E up front cost the Service \$42M in procurement funding for CCTT in FY01).



Operational Test Agency

Planning, Programming & Budgeting

- **Start planning, programming and budgeting for adequate resources**
 - Conduct of OT and FOT&E where OTA is responsible
 - Early Involvement
 - Electromagnetic Environmental Effects Testing
 - Information Assurance Testing
 - Systems-of-Systems Testing
 - Support for all phases of evolutionary acquisition
- **Work harder to identify resource requirement in early TEMPs**



Service T&E Executives

Planning, Programming & Budgeting

- Adequate resources to comply with DoDD 3200.11
- Funding for investments in generic capability
- Support all phases of evolutionary acquisition
- Support for S&T program for T&E



GAO Report on Best Practices:

A More Constructive Test Approach Is Key to Better Weapon System Outcomes

■ Purpose

- Examine effects of T&E on program success
- Compare commercial and DoD T&E practices
 - Boeing, Intel, GE, AT&T
 - Dark Star, THAAD, Army Cargo Trailer, SLAMER
- Determine what factors account for the differences

■ Focus

- Test strategy and the use of timely test results to support early and succeeding acquisition decisions

■ Findings

- Test early
- Learn versus Score
- Constructive versus Adversarial Relationships



GAO Report on Best Practices:

A More Constructive Test Approach Is Key to Better Weapon System Outcomes

■ Report recommendations:

- (1) SECDEF instruct managers & testers to work together to define desired levels of product maturity that need to be validated and structure test plans and orchestrate the right mix of tools to validate these levels.**
 - DoD concurred with this recommendation and has reflected it in rewrites of DoD Directive 5000.1, DoD Instruction 5000.2, and DoD Regulation 5000.2-R, based on the concept of integrated test and evaluation.**



GAO Report on Best Practices:

A More Constructive Test Approach Is Key to Better Weapon System Outcomes

- **Recommendations continued:**
 - **(2) SECDEF not let the validation of lower levels of product maturity be deferred to the higher level of system testing**
 - **DoD concurred. The rewrites are based on the accumulation of knowledge building towards system integration.**



GAO Report on Best Practices:

A More Constructive Test Approach Is Key to Better Weapon System Outcomes

■ Recommendations continued:

- **(3) SECDEF not allow a major test or validation event for a weapon system program to be scheduled in the same budget year as a major programmatic or funding decision.**
 - **DoD did not concur. DoD stated that we cannot afford this. It would delay needed systems to the Warfighter and be cost prohibitive. We must ensure that there is adequate time between the major event and the decision to adequately evaluate results.**
- **GAO reworded their recommendation. Substituted language calling for weapon systems to demonstrate product maturity before major programmatic approvals.**



DSB Task Force on T&E

■ Terms of Reference:

- Analysis of resources and capabilities of all ... T&E facilities of the DoD
- Opportunities to achieve efficiency and reduce duplication of effort
- Analysis of what DoD T&E capabilities required to support JV2010/2020

■ Members

- Dave Heebner, Chair
- Tom Christie
- Jack Krings
- Tom Peoples

Concerned with findings in draft report



Conclusions

- Institutionalize early involvement
- Plan, program and budget for adequate resources for T&E
 - Operational Test Agencies
 - T&E ranges and facilities

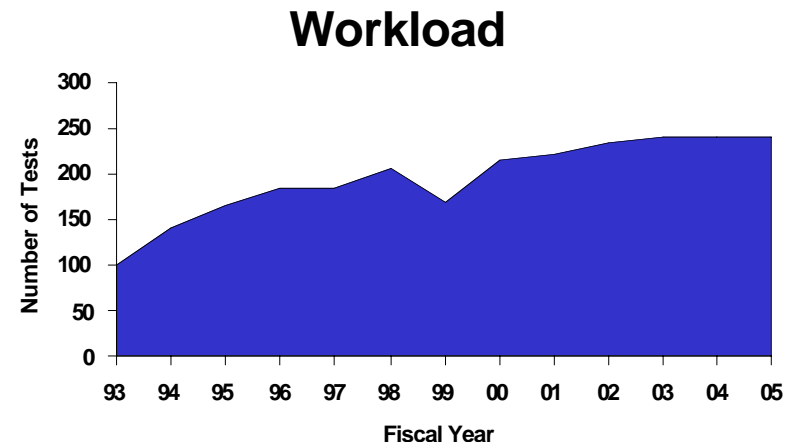
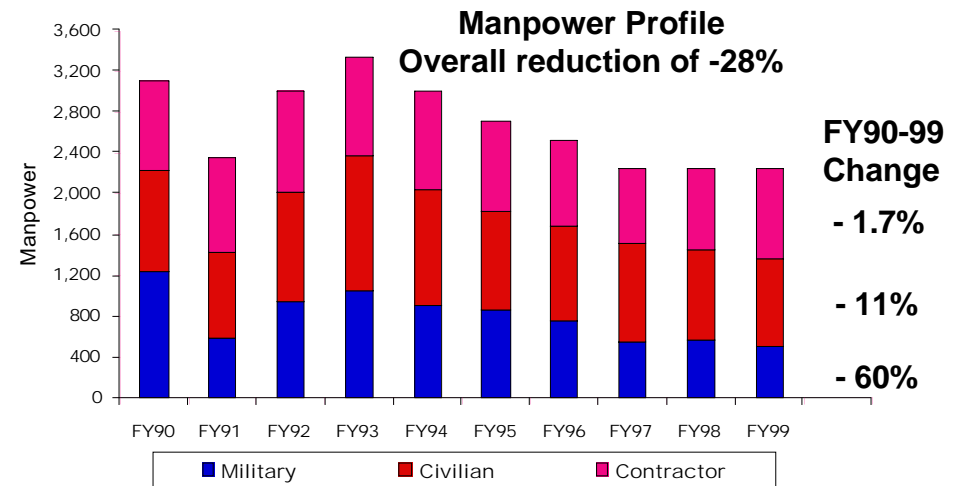


BACK-UP



Army Operational Test and Evaluation

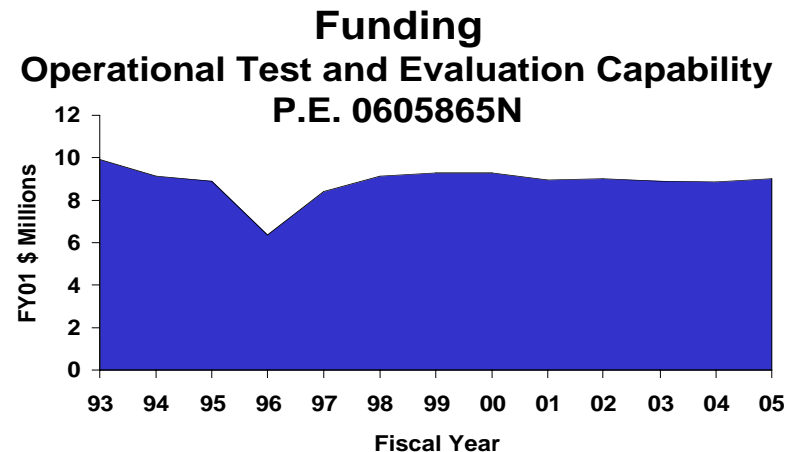
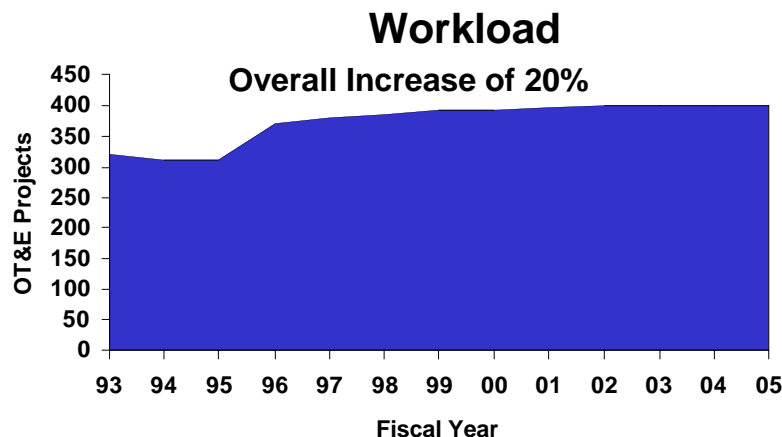
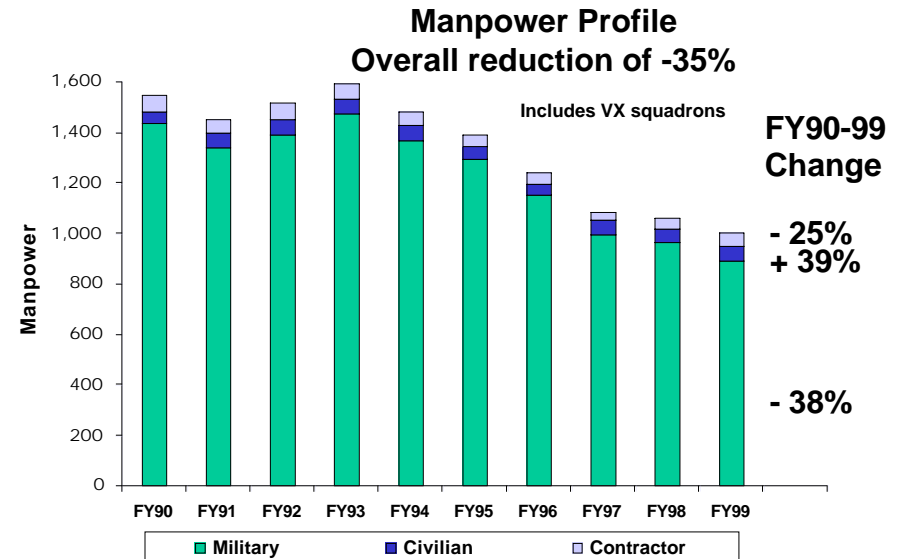
- **Military workforce cut 60% FY90-99**
- **Civilian workforce cut 11% FY90-99**
- **Workload up 121% FY93-01**
- **Currently fund \$20.5 (46%) of \$44.9M required to execute ACAT II - IV operational tests, critical FY01 shortfall is \$8.7M to fund to \$29.5 (65%) execution experience level**
- **Impact:**
 - **Cannot fund 39 ACAT II - IV FY01 operational tests, critical FY01 shortfall is \$8.7M**
 - **Cannot fund 4 FOT&E programs, critical FY01 shortfall is \$7.5M**





Navy Operational Test and Evaluation Command

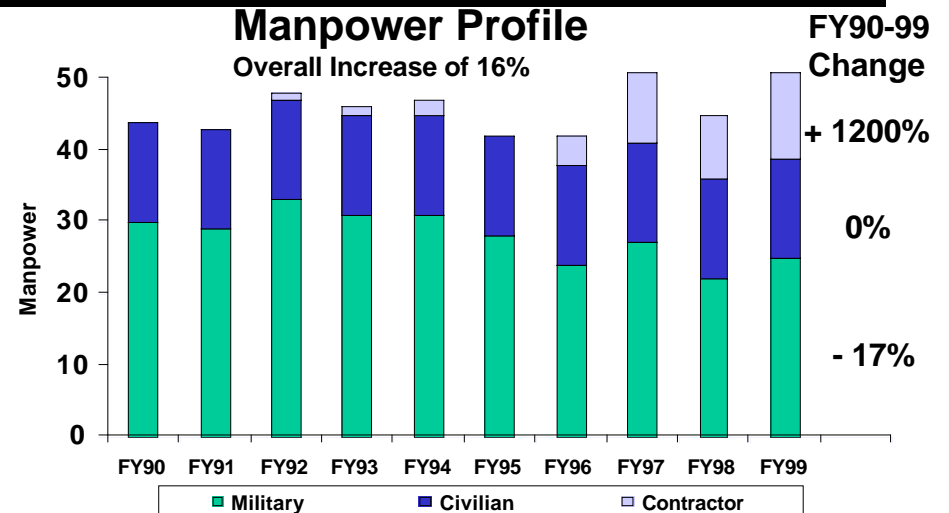
- Workload higher than at any other time in its 55 year history
- FY01 funding down 10% from FY93
- All operational test costs (except travel) funded by acquisition programs
- Early involvement of operational testers funded by acquisition programs that benefit or it does not tend to happen



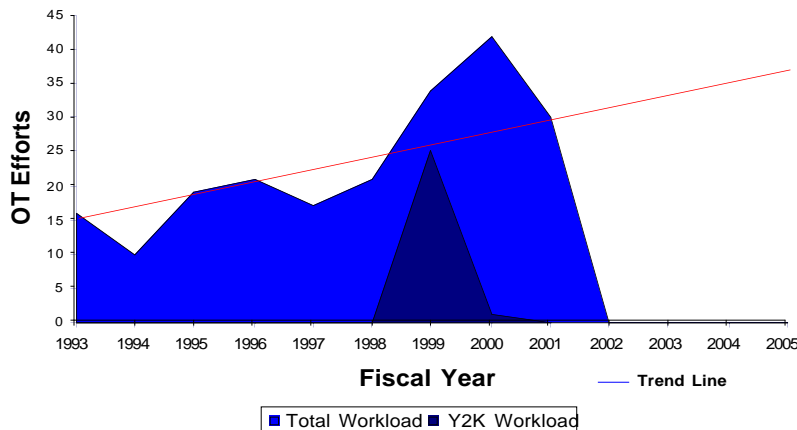


Marine Corps Operational Test and Evaluation Agency

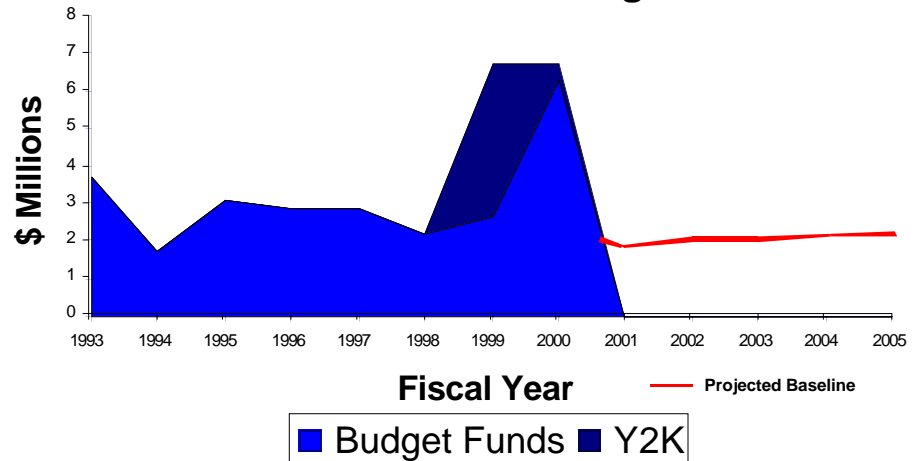
- Decreasing personnel levels to accomplish increasing workload
- OT&E of AIS not supported until POM 02
- 25 potential AIS OT programs to prioritize based on available resources
- Insufficient resources to meet NBC OT requirements



MCOTEA Workload



MCOTEA Funding

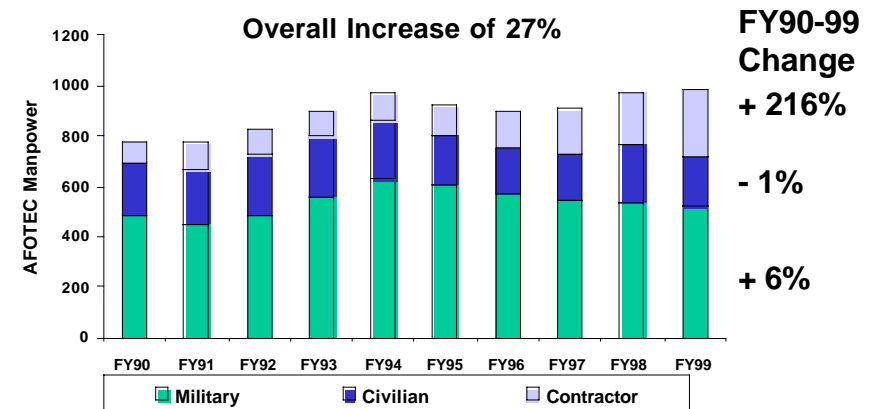




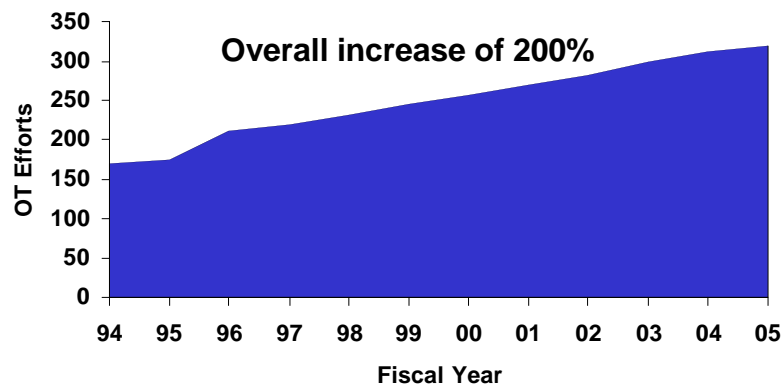
Air Force Operational Test and Evaluation Command

- FY01 budget request does not fully fund operational test requirements
- 20 of 49 test programs at risk including:
 - Milstar II
 - Advanced Strat. & Tact. IR Expendable
 - Miniature Air Launch Decoy
- **Impact:**
 - FY01 RDT&E critical shortfall is \$2.6M due to spike in range costs for OT&E programs
 - FY02 Shortfall between \$4-9M

Manpower



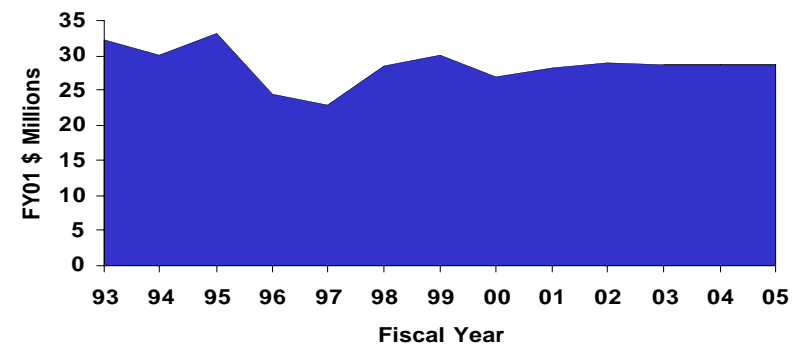
Workload



AFOTEC Funding

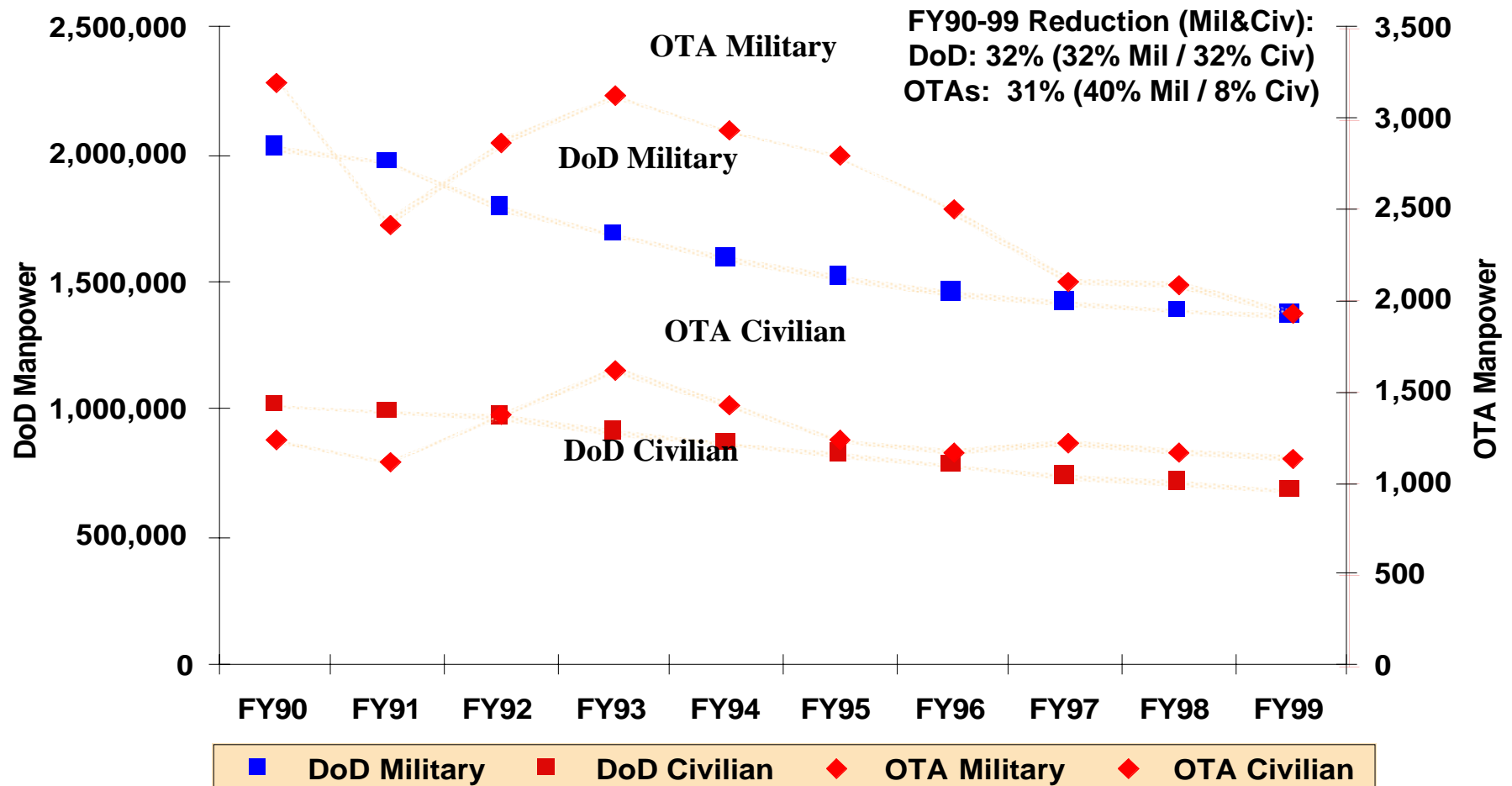
Initial Operational Test and Evaluation

P.E. 0605712F



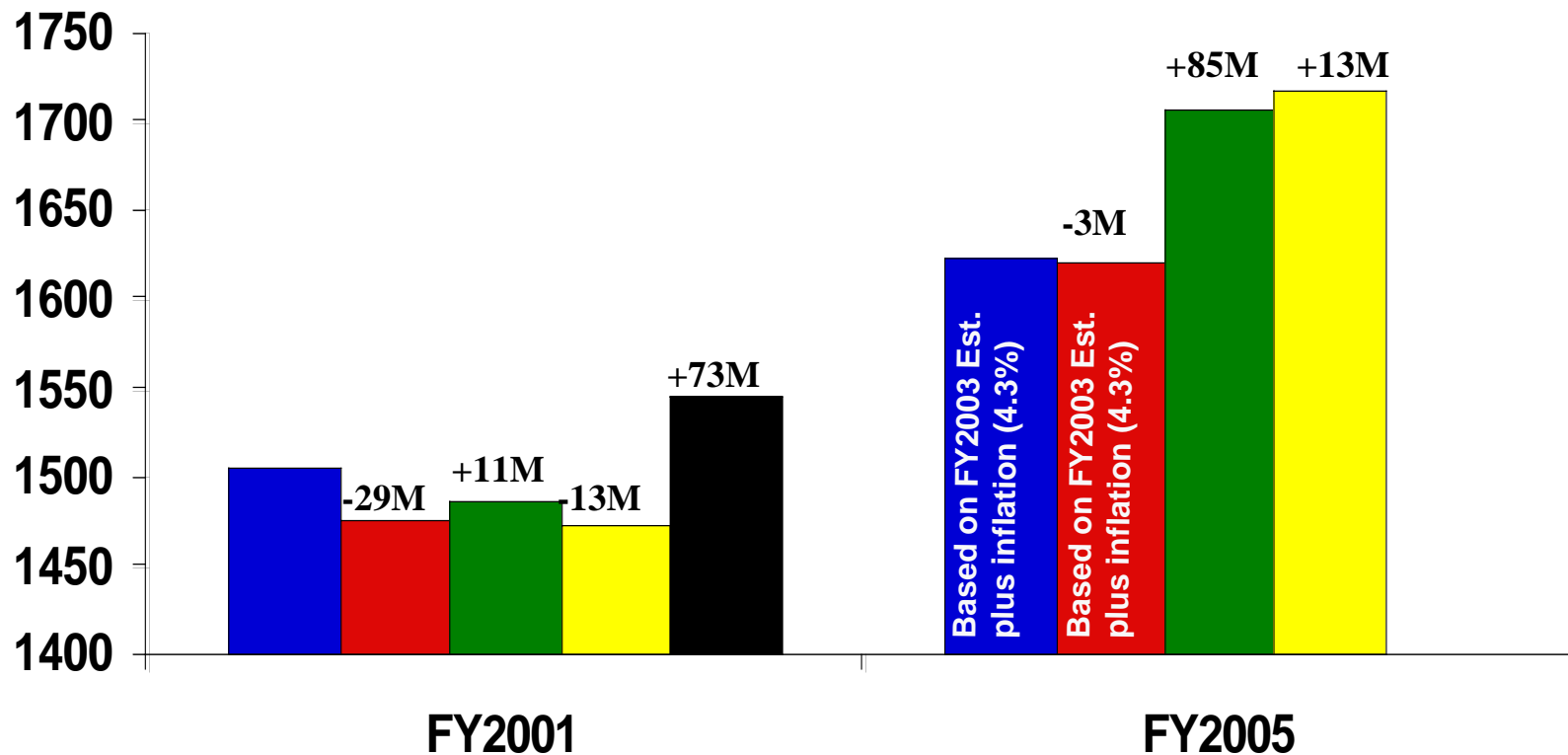


DoD and OTA Workforce Trends (FY90-FY99)





RDT&E Institutional Funding for T&E



■ FY98 PB (Feb 97)	■ FY99 PB (Feb 98)	■ FY00 PB (Feb 99)
■ FY01 PB (Feb 00)	■ Cong. Appr. Changes	



MRTFB Funding Reduced Significantly

